GEOGRAPHIC NEWS BULLETINS

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated under the Federal law as a non-commercial institution for the increase of geographic knowledge and its popular diffusion.)

General Headquarters, Washington, D. C.

Contents for Week of April 20, 1936. Vol. XV. No. 8.

1. Harar, the Battered Pride of Ethiopia's East
2. Stratford-on-Avon Thrives on Birthplace Business
3. Many Changes Greet Spring Visitors to National Capital
4. Dead City of Monte Albán a Live Issue Again
5. Highways Recover from Ice Crystals' Annual Attack

Photograph by W. A. Mansell and Co.

SHRINE OF SHAKESPEARE'S OWN PILGRIMAGES

To Anne Hathaway's cottage, at Shottery, Shakespeare took the winding path from Stratford across the open meadows, just as his admirers may do today. The thatched cottage is now government property as part of the Birthplace Foundation (see Bulletin No. 2).

HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic News Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers for one year upon receipt of 25 cents (in stamps or money order). Entered as second-class matter, January 27, 1922, at the Post Office at Washington, D. C., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of October 3, 1917, authorized February 9, 1922.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Harar, the Battered Pride of Ethiopia's East

WAR has destroyed many ancient cities—Carthage, several Troys, Jerusalem, and Jericho. Changing tides of business within one generation have made ghost towns of thriving communities. But Harar, it is said, became a has-been within three hours.

A fleet of Italian bombing planes hovered over Ethiopia's second city and left it a flaming ruin.

In its prime, Harar was considered an Ethiopian stronghold, for it was protected by a high stone wall about three miles in circumference and studded with 24 towers. Four major forts defended its four corners. A survivor of the Middle Ages would have felt at home in this modern walled city, for it was long the custom to close the five gates in the wall at nightfall, forbidding anyone to leave or enter until the following morning.

Walls Could No Longer Keep Enemy Out

Confronted with modern warfare, however, walls became less a protection than an added danger. News reports stated fear of bombing raids had caused such preparations as battering large openings in the walls, so that inhabitants could escape quickly without crowding through the five narrow gates if an air attack should come.

The site of Harar is on a fertile plateau about 4,000 feet above sea level. Its location and climate have helped make it an important trade and communications center of Ethiopia—indeed, the chief eastern city of Haile Selassie's empire.

In its relatively small walled area, four-fifths of a mile long and one-half of a mile wide, is crowded a population of approximately 40,000 people in normal times.

Most of its streets were little more than narrow alleys, some of them only three or four feet wide, steep and poorly paved and cluttered with refuse. They wound between one and two-story buildings built of undressed stone and mud, with thatched roofs.

Along the streets stood many small shops, some a few steps below the street level, in which worked blacksmiths, silversmiths, swordmakers, and other artisans. Homes were round shells of stone crowned with cones of thatch.

Mosques Reminders of Arab Origin

The more extensive buildings included the Governor's Palace, the government prison, mosques, missions, and hospitals. In addition to one especially for lepers, hospitals were operated by French, Egyptian, and Swedish groups. Facing the city's principal square stood the Ethiopian Cathedral and the Rauf Mosque, side by side.

Mohammedan mosques were a reminder that the city of Harar was originally settled by Arabs, who migrated from Yemen on the eastern shore of the Red Sea, according to tradition, as far back as the 7th century A.D. It was the capital of an Arab state from which, in the 15th century, Arab armies invaded and conquered a large part of what was then Ethiopia.

No white man visited Harar, so far as is known, until 1854, when an Englishman, Sir Richard Burton, spent ten days there disguised as an Arab. In 1857 the region was occupied by an Egyptian army and held for ten years until troubles in the Sudan forced the withdrawal of the garrison.

UMI

© National Geographic Society

OAXACA PROVIDES A LIVELY CONTRAST TO NEIGHBORING MONTE ALBÁN

The dead city of Monte Albán has recently revealed a lone keystone arch, the only one known to have been built in the Americas before Columbus. Oaxaca, only seven miles away and very much alive, has a plentiful supply of keystone arches in its Municipal Building (right) alone. But both cities were built around a plaza, which is the heart of any Mexican town (see Bulletin No. 4).

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Stratford-on-Avon Thrives on Birthplace Business

BIRTHDAY greetings in Stratford on April 23 will resemble,

"What's to do?
Shall we see the reliques of the town?"

For the birthday will be Shakespeare's, and the greeters will be visitors from far and wide. As patly as if written for advance publicity, *Twelfth Night* answers its own question:

"I pray you, let us satisfy our eyes
With the memorials and the things of fame
That do renown this city."

Yearly the Shakespeare Festival starts in time to celebrate the Bard's birthday, the signal for an open season on haunt-hunting, when pilgrims flock Avon-ward to see life from Shakespeare's windows, if not from his point of view.

Town Is "Little Nursemaid of a Mighty Child"

Stratford has been written down as a market town of Warwickshire since the Domesday Book first took inventory of the wealth of England. Its principal commodity, however, was not mentioned in those early lists of taxable commerce, for the name Shakespeare did not appear among those of its citizens until John Shakespeare moved to town from the neighboring village of Snitterfield, in 1551.

Now the town, grown to two or three times its size in Shakespeare's day, sells to tourists the satisfaction of having gone as far as travel will take them toward understanding the mystery of a world genius sprung from quiet Henley Street. Every reminder of Shakespeare is preserved. There is a Shakespeare Hotel, with rooms named for plays. Curio shops sell models of the Tumble-down Stile where the poet scalawag was captured after his poaching expedition into Sir Thomas Lucy's deer park. Postcard shops quote *King John,* "Have I not the best cards?," and a postoffice substation has been established near the Henley Street birthplace.

Busily playing nursemaid to its favorite son, Stratford does little else. There is some brewing. On Tuesdays herdsmen of the district assemble for the cattle market held there since the days when the "Rother Market" (horned cattle) gave its name to the town's central square. On Fridays farmers bring in their produce, as John Shakespeare may have done before he moved to Stratford.

Jolly Legends, Ruled Out of Textbooks

To be itself for the tourist trade, in spite of the tourist trade, is really Stratford's biggest job. To remain unchanged is a problem, with the constant additions of new hotels, apartment houses, shops with plate glass windows, electricity and gas, and a railway station. The first observation of Americans, and their chief complaint, is that there are so many other Americans.

For this constant stream of curiosity from abroad, Stratford cherishes everything linked with Shakespeare and even extends hospitality to traditions which historians scorn to record. This, one may learn, is the chimney corner in which the young poet stoked his imagination with more than one of his elders' many "winter's tales." This is the heavy-raftered room of the Grammar School where, at a desk now removed from the northern end, he studied his disputed Latin and Greek—or looked out of the window beside him. This is the long room of the Guild Hall where he first encountered drama, in a play presented by traveling actors.

UMI

The province was under British influence until 1887, when it was conquered by Menelik II who later became emperor of Ethiopia, and who conquered the Italians at Aduwa in 1896. During the period from 1891 to 1896 Harar Province was an Italian protectorate.

Important Caravan Center

Diredawa, 35 miles to the north, captured some of Harar's commerce when the Addis Ababa-Djibouti railroad was built. Harar, however, remained an important center for caravan trade, doing a brisk trade in coffee, kat (a plant producing a drug), cattle, mules, camels, hides, ivory, and gums. It was referred to as a channel for munitions arriving in Ethiopia.

Harar Province, of which the city is the capital, is famous for its coffee, much of which is exported. A portion of the crop comes to the United States. Coffee grows wild in some parts of Harar Province, a reminder that Ethiopia was the original home of coffee.

Note: Ethiopia, whose conflict with Italy has made a little-known part of Africa world-famous, is described in the following articles: "Open-Air Law Courts in Ethiopia," *National Geographic Magazine*, November, 1935; "Traveling in the Highlands of Ethiopia," September, 1935; "Life's Tenor in Ethiopia," June, 1935; "Modern Ethiopia" and "Coronation Days in Addis Ababa," June, 1931; "Nature and Man in Ethiopia," August, 1928; and "A Caravan Journey Through Abyssinia," June, 1925.

See also in the GEOGRAPHIC NEWS BULLETINS: "The Sizzling Danakil Plain, an Ethiopian Bulwark," week of February 10, 1936; "Little Rains and Big Rains—Ethiopian Allies, week of January 27, 1936; "Makale, Ethiopia's 'Salt Seller', Again in Italian Hands," week of December 9, 1935; "Aksum Has Been Holy City of Ethiopia for Many Centuries," week of December 2, 1935; "Ogaden, Where Ethiopia's 'Stork Men' Lurk," week of November 11, 1935; "Is It Ethiopia or Abyssinia?" and "Addis Ababa, Modern Capital of an Ancient Empire," week of October 7, 1935.

Bulletin No. 1, April 20, 1936.

Photograph by Addison E. Southard

HARAR WAS ETHIOPIA'S "COFFEE MILL"

Drying on the ground in front of the customhouse at Harar, coffee is being prepared for export, for Ethiopians drink little of it. Cultivated coffee trees have made a round trip from Ethiopia. They were found growing wild in the province of Kafa, sent to Arabia, and brought back with early Mohammedan settlers of Harar.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Many Changes Greet Spring Visitors to National Capital

SHOVELING a thick caramel layer of Potomac flood mud from its green border of parks, Washington greets the annual rush of spring visitors with some new scenes and many old favorites renewed.

Tidal Basin cherry blossoms, dodging schedules and weather prophets, burst early from pink buds to white bloom. This year their flowery circle, as delicate as a smoke ring, had new recruits, 200 small cherry trees and 16 large ones. They were followed by an even more colorful display around Hains Point as the tardier pink blossoms opened. A background of newly planted holly trees furnished contrast for the leafless snowy blooms of the Japanese trees.

The completed Arlington Cemetery Gateway, now ready for its memorial statue, and a full set of pylons on the Arlington Memorial Bridge, usher southern visitors into a refurbished Mall.

Washington Grows More Vista-Conscious

From the Lincoln Memorial to the Capitol, stretches a green expanse of parks, embroidered with darker green trees and black roadway threads. It is now possible to drive the entire distance down "vista roads," which skirt the Reflecting Pool and the Washington Monument and lead to the Capitol's western steps.

Union Square has been landscaped to frame the Grant Memorial Monument. This impressive group, including the second highest equestrian statue in the world, has extended its marble platform and developed a green border of boxwood.

Another development in the Mall is taking place in the Rose Gardens, in spite of a heavy cracked layer of mud left by the Potomac's visit. Trees, shrubs, and rose bushes are accumulating there for a Shakespeare Garden, plans for which are not yet complete. Rosemary—"that's for remembrance"—will not be lacking; a nearby greenhouse is keeping rosemary plants in readiness.

New Interior Building Rises

A complicated framework of red girders and concrete promises a new Interior Building, to contain office space for 5,000 people and two miles of corridors. This will be the first major government building in Washington authorized, designed, and constructed under the present administration.

A block away on Constitution Avenue, between 20th and 21st Streets, work has been started on the Federal Reserve Building. Both of these structures are units in the Northwest Rectangle of government buildings.

The Federal Triangle, that massive wedge of granite buildings pointing toward the Capitol, has won an excellent point in the new Archives Building, its apex. In addition to its two carved pediments and low-relief panels of guarding Roman soldiers, the new home for old documents is decorated with four heroic seated statues, representing Philosophy, History, Productiveness, and Eternal Vigilance.

With its major units now complete (see illustration, next page), the Federal Triangle is the largest group of related national buildings in the world. It occupies about 74 acres and is three times as large as the Acropolis, glory of ancient Greece.

The Library of Congress is growing up, building an annex across Second Street, Northeast, behind the Folger Library. The Annex will provide space for ten million books and will help to solve the Library's storage problem of 500 new volumes daily.

UMI

For those who hesitate to believe, Washington Irving has recommended that "There is nothing like a resolute good-humored credulity in these matters." At the foundations of New Place, demolished by a preacher annoyed by sightseers, each one may, in fancy, reconstruct the house in which Shakespeare died.

The new Memorial Theater, of modernistic brick, with sliding stage floors and air conditioning, has been dubbed "a jam factory on the Avon." But its critics have been reminded that it departs from accepted ideas about theaters even less than the Bard ignored traditions of play-writing.

Stratford, however, would be interesting if Shakespeare had not been born there. The Harvard House, ancestral home of Massachusetts' famed University, is more interesting architecture than the Henley Street shrine. The Red Horse Tavern is still warm with Washington Irving's appreciative glow. Mason Croft was the residence of Marie Corelli. Holy Trinity Church and the Guild Chapel are among several fine relics of the Middle Ages. But if the boy Will had not run off to London, whether because of a depression or a stolen deer, and fallen into the "bad company" of actors, not so many people would have come to Stratford-on-Avon.

Note: Photographs of and references to places connected with Shakespeare and the era in which he lived, are to be found in the following: "Vagabonding in England," *National Geographic Magazine*, March, 1934; "The Beauties of the Severn Valley," April, 1933; "Visits to the Old Inns of England," March, 1931; "From Stratford to the North Sea" (color insert) May, 1929; and "Through the Heart of England in a Canadian Canoe," May, 1922.

Bulletin No. 2, April 20, 1936.

Photograph by Robert Reid

THE AVON IS A ONE-MAN RIVER

The Avon is linked more closely to Shakespeare than the Rubicon to Caesar; yet the Bard did not mention it by name in his plays. Today steam launches carry visitors along the banks of Stratford to see the old water-mill, the ancient 14-arched bridge which Sir Hugh Clopton gave the town, and the spire of the Church of the Holy Trinity, where the poet is buried—all of which Shakespeare knew.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Dead City of Monte Albán a Live Issue Again

PRECIOUS stones are becoming a specialty of Monte Albán. Several years ago this abandoned city of southern Mexico amazed its excavators with pearls as big as pigeon eggs. Now it has revealed a keystone.

The keystone is more precious to archeologists than pearls, for it is rarer. In fact, it is the only one known to have been used in the Western Hemisphere during all the centuries of human habitation and building before the white man brought his own ideas about such things from Europe.

Why was that keystone, faithfully supporting its arch after more than a thousand years, not copied and used elsewhere? Was the idea abandoned, forbidden, or not recognized for its real worth? This mystery is one of the countless curious questions shrouding Monte Albán, the dead city with a fairy-tale present.

A Treasure City of Jewels and Information

Indeed, this dead city is not really dead at all. It is teeming with the excitement of discovery, with food for thought, and the thrill of an unpredictable future. It attracts almost as much international attention as any populated city of its size in both Americas.

Six years ago Monte Albán was merely a few mounds on a mysteriously leveled hill in Mexico's southern state of Oaxaca—a few vague knolls and a whispered legend among the quiet Indians of the countryside. Discovery of modern pottery, for food and drink, before a crumbling altar showed that ancient gods had not been forgotten. Recent excavations reveal treasure valuable enough to make a dent in a war debt, and information which may re-shape America's ancient history.

Monte Albán may prove to be almost 2,000 years old. Its early inhabitants, perhaps at a time when the white man's Nordic ancestors still ate their meat raw, leveled a mountain top and terraced its sides for a safe, beautiful, and healthful home site. After being occupied by several tribes in slow succession, the place became such an impressive city that it won from Spanish invaders the title of Monte Albán, the White Mountain.

Within a space equal to several modern city blocks stood a central Plaza of the Sun and a border of masonry platforms from which rose pyramidal temple or government buildings. The largest mound, when cleared of underbrush and debris, revealed the huge North Platform, which is ascended by the widest ancient stairway known in America, some 130 feet across.

Mystery of Obtaining Water at a Hill Top

Shapeless heaps of rubbish proved to be tombs and temples. Secret sunken courts, winding underground passages, and buried rooms with gabled ceilings have come to light. A ball court was discovered, an important feature of city planning in a realm where rubber balls were first developed for games.

The question of water supply for an extensive population on a dry hilltop no longer puzzles Monte Albán's excavators. They have found a sewer system which drained the North Platform, and other ducts that probably carried rain water to a hidden reservoir.

Tombs furnish many puzzle-pieces to be fitted together. The famous No. 7

UMI

Not all of Washington's changes bring expansion to its buildings. The former Patent Office is having its front steps amputated to make room for widening F Street between Seventh and Ninth.

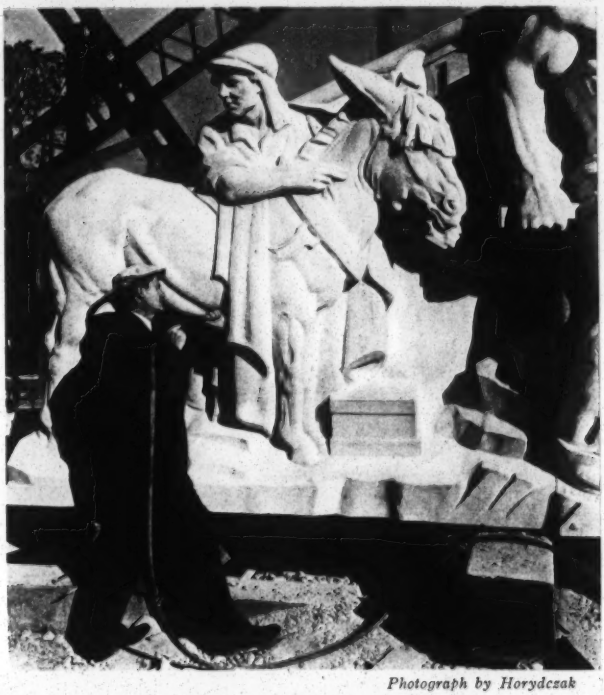
A bronze tablet on the front of 1219 H Street, Northwest, now indicates the home in which Mrs. Frances Hodgson Burnett wrote "Little Lord Fauntleroy," published fifty years ago last month. George Bancroft, founder of the Naval Academy, is commemorated by a similar plaque on the office building which replaced his residence at Seventeenth and H Streets.

Lafayette Square is having trees and benches uprooted and walks curled about in different directions to improve the view. Changes at George Washington University include a new red brick classroom building in its colony of white structures.

Rock Creek Park has acquired new charms with the completion of two bridges and an extension southward of its main motor drive to the Potomac. Old Pierce Mill's new water wheel adds to the interest of that landmark. The Zoo, a perennial favorite, is constructing new homes for birds and small mammals, a central heating plant, and an elephant house.

Note: The following illustrated articles record the many changes in the Nation's capital over a period of fifteen years: "Wonders of the New Washington," *National Geographic Magazine*, April, 1935; "Winter in the Nation's Capital" (picture insert in duotone), February, 1935; "Washington Through the Years," November, 1931; "Approaching Washington by Tidewater Potomac," March, 1930; "Unique Gifts of Washington to the Nation" (insert of color pictures), April, 1929; "Source of Washington's Charm," June, 1923; and "Views of the Lincoln Memorial" (picture insert), August, 1922.

Bulletin No. 3, April 20, 1936.



Photograph by Horydczak

WHERE WORKERS REST—IN STONE

Workmen of America, including a miner with his burro and a steel worker pouring molten metal, inspired the decorations which have been hoisted to the pediment of the Commerce Building. The new Post Office and the Department of Justice are receiving interior decorations, too, of murals by leading American artists.

GEOGRAPHIC NEWS BULLETIN

Published Weekly by

THE NATIONAL GEOGRAPHIC SOCIETY

(Founded in 1888 for the Increase and Diffusion of Geographic Knowledge)

General Headquarters, Washington, D. C.

Highways Recover from Ice Crystals' Annual Attack

AMERICA'S hardest winter in recent years is ended, but its memory lingers on. Students stumbling over cracked and heaved pavements, cars bouncing over holes and bumps in macadamized highways, or school buses plowing through once-smooth gravel and earth roads find constant reminders of winter.

Motorists bumping over "frost boils" or mired to the hubs in mud in early spring, seldom realize that most of their trouble is caused by tiny ice crystals which form in the soil and develop a lifting power estimated at several tons to the square foot.

These ice crystals, barely visible to the naked eye, form in vast numbers in the ground when temperatures drop below freezing during the winter. The crystals grow, and as they grow they thrust upward with a mighty power, like innumerable tiny jack-screws, literally "jacking up" surfaces above them.

Ice Crystals "Jack Up" Concrete Slabs

Forming beneath pavements, these ice-crystal "jacks" can lift a heavy slab of concrete pavement a foot or more above its normal level, and raise "boils" and bumps in other types of roads that break under heavy traffic, forming pits and mud holes.

They have caused many broken springs and other accidents, giving farmers an extra income in hauling stranded automobiles and trucks out of the mud.

Not only highways and country roads, but city street pavements, sidewalks, and buildings as well are lifted, cracked, or thrown out of line by the power of the tiny ice crystals.

Only recently have scientists, by freezing samples of soil in their laboratories, learned how ice crystals destroy pavement and how roads can be built so that the crystals can do no harm.

Damage from Both Freezing and Melting

The crystals do their damage in two ways—when they freeze and when they melt. Freezing crystals push up pavements; melting crystals leave pockets of water or thin mud under roads, and the surface, left unsupported, breaks as heavy vehicles pass over it. Unpaved roads, saturated below the surface by melting ice, develop mud holes.

Ice crystals begin forming from water in the soil when the temperature drops below freezing. Then they start to grow when water from below rises to them.

Everyone knows that if a very small hollow glass tube is placed upright in a basin of water, the water will rise in the tube a little higher than the level of water in the basin. This is due to what is called "capillary action." The smaller the diameter of the tube, the higher the water will rise in it.

This same process is what enables ice crystals to grow in the soil. Innumerable tiny "tubes" or passages extend downward through the earth. Water from below rises through them. Capillary action pulls the water up to the ice crystals and there it freezes, gradually adding to the size of the crystals.

The crystals form masses of ice, which push up the soil above in proportion to their increase in size. If the soil is very fine, so that water rises readily through its passages, particularly if there is plenty of water below, ice masses form and

UMI

(see illustration, below) was rich with objects fashioned by Mixtec jewellers' skill—a rock-crystal goblet larger than any other in the Western Hemisphere, representing a lifetime or two of patient polishing; gold necklaces of beads shaped like tiny turtles; gold and silver rings decorated with eagles holding bells in their beaks; ornaments of amber and jet, never previously found in Mexico; breastplates and masks of beaten gold; sacrificial knives cunningly carved; a skull inlaid with turquoise.

Zapotec pottery, Toltec carving, Aztec symbols, Maya customs—such as burying sacred jade figures beneath an altar—suggest that Monte Albán was a clearing house for the principal cultures of Central America. One race, the negroid deformed people grotesquely carved on ancient stone slabs, has not been identified except as "the Dancers."

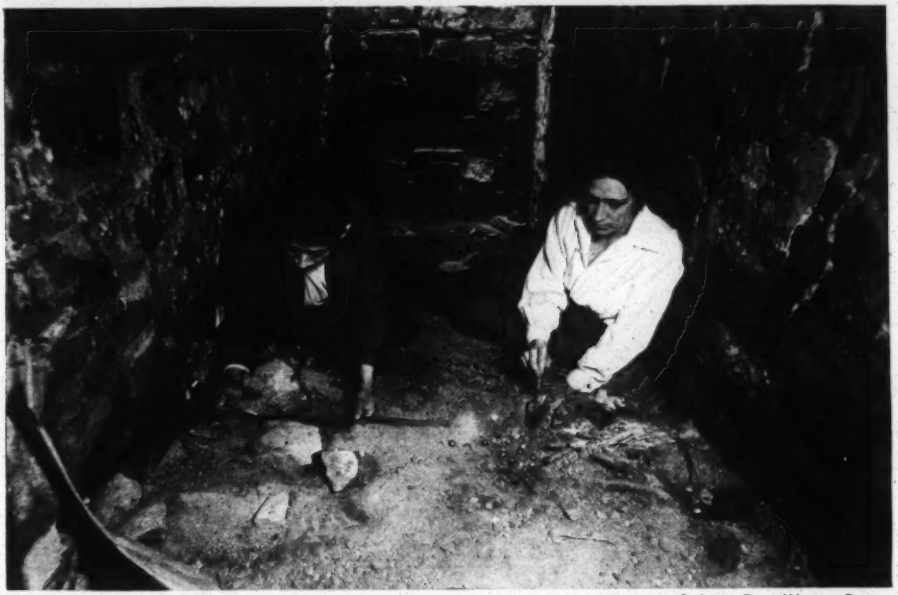
Oaxaca, seven highway miles away, is now the principal city of the fertile mile-high valley of Oaxaca. The region's fine crops, mineral resources, and fifteen wealthy resident tribes pleased Cortés, who swept through it like a destructive cyclone (see illustration, inside cover).

Ancient culture could not be destroyed, however, at Monte Albán — only dimmed. Its early glory is being revealed, as picks turn back the pages of history.

Note: For additional material and photographs about Monte Albán see "Monte Albán, Richest Archeological Find in America," *National Geographic Magazine*, October, 1932.

Data and photographs about other centers of North American archeological exploration can be found in the following: "Preserving Ancient America's Finest Sculptures," November, 1935; "Unearthing America's Ancient History," July, 1931; "Among the Zapotecs of Mexico," May, 1927; "Chichen Itzá, an Ancient American Mecca," January, 1925; "Ruins of Cuicuilco May Revolutionize Our History of Ancient America," August, 1923; "Foremost Intellectual Achievement of Ancient America," February, 1922; and "Home of a Forgotten Race," June, 1914.

Bulletin No. 4, April 20, 1936.



Photograph from Dr. Alfonso Caso

RAISING HISTORY FROM THE DUST OF A TOMB

Monte Albán's tomb No. 7 revealed rich treasures and theories. Mixtec jewels in a tomb of Zapotec construction brought several explanations, among them an account of the secret burial by faithful followers of a hostage hanged by Cortés. Each of the 500 objects found was labeled with a complete record of its condition and relative position. Here measurements are being taken for a necklace of gold and jade beads.

grow much more readily than in coarse soil. Fine, silty soils favor ice formation. Sand and gravel resist it, for water does not rise readily through their larger passages.

If all the soil under a pavement is pushed up equally by ice crystals, little or no damage is done. Trouble comes when only parts of a road are pushed, forming bumps or ridges. This can happen easily, because most roads cross many different types and textures of soil.

Engineers are learning to insulate roads against ice crystal formation, by placing a layer of sand or gravel beneath, and draining spots where water gathers in the subsoil.

Note: Some of the roads and streets of the United States affected by ice crystal formations are described and illustrated in the following: "Northern California at Work," *National Geographic Magazine*, March, 1936; "Diamond Delaware, Colonial Still," September, 1935; "A Patriotic Pilgrimage to Eastern National Parks," June, 1934; "A Native Son's Rambles in Oregon," February, 1934; "New York—An Empire within a Republic," November, 1933; "New Jersey Now!" May, 1933; "Washington, The Evergreen State," February, 1933; "The Historic City of Brotherly Love," December, 1932; "Colorado, A Barrier That Became a Goal," July, 1932; "Ohio, The Gateway State," May, 1932; and "The Travels of George Washington," January, 1932.

Bulletin No. 5, April 20, 1936.

NOTE TO TEACHERS: For additional material for projects that were undertaken in connection with Pan American Day, April 14, teachers may find a review "tour" stimulating to classes. Pilot Charles Lindbergh offers a birdman's-eye-view of thirteen Latin-American countries in "To Bogotá and Back by Air," *National Geographic Magazine*, May, 1928. A different journey is offered in "How Latin America Looks from the Air," October, 1927.

© *National Geographic Society*

MOUNTAIN ROADS SUFFER FROM COLD

Cold weather attacks such highways from beneath, heaving them up with the expansion of ice crystals in freezing and damaging them in thawing too. New spring patches are usually necessary as a result. Part of the National Old Trails (U.S. 40) is shown above, with Grantsville, Maryland, in the distance. At the right is an old "herringbone" or "snake and rider" rail fence.